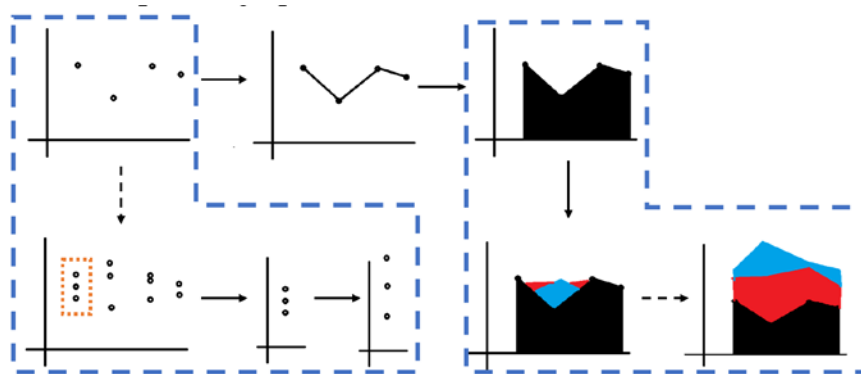

Weekly Report / MEI Honghui

6.12-6.18

Scattered Ideas

VisEvo

1. Design decision model x ; ?
2. Refinement: 选择->修改->应用
 - a. 模糊化操作
 - i. 选择可以不必精确
 - ii. 修改可以半自动
 - iii. 自动应用
3. Provenance
 - a. Provenance or reactive ?



4. Reactive programming
 - a. Tag based control
 - i. Matrix/scatterplot/circle/selected

Others

1. Presentation 间相似度度量 /(Object/item 的)对应关系检测
 - a. 同构/异构

b. 用于：查询、数据挖掘、？

2. 交互/动画的制作

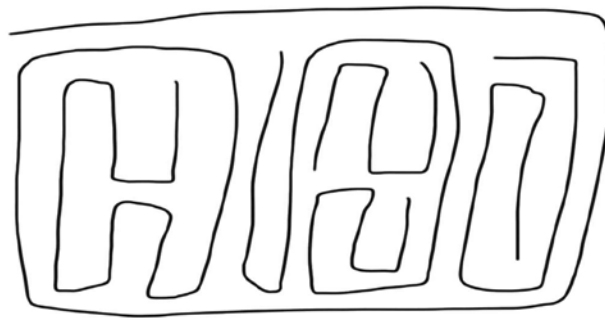
a. 矩阵重排(无过程，直接改变数据即可)：简单 ==??==> 拖着走：难

i. 额外的状态（被拽着的行/列；其他行/列的动画（空格、平移））

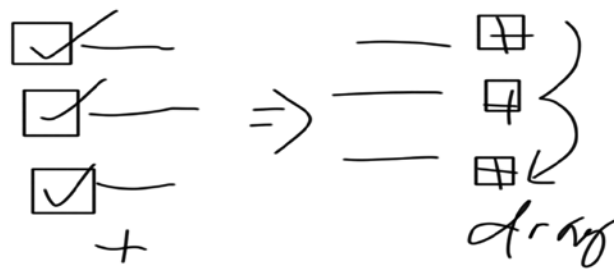
3. 交互反馈（用户调研）系统

4. Provenance/history: 动画表达？ <https://medium.com/ux-in-motion/creating-usability-with-motion-the-ux-in-motion-manifesto-a87a4584ddc>

5. Working process（图：剃草坪）



6. Interaction design



7. Perspective: <https://www.sketchbook.com/blog/how-to-draw-from-imagination-freehand-perspective-and-drawing-in-3d/>

Paper Read

paper read is mostly from CHI 2017. They look at visualization topics at a different aspect other than those in VIS.

[1] S. Padilla, T. S. Methven, D. A. Robb, and M. J. Chantler, "Understanding Concept Maps : A Closer Look at How People Organise Ideas," pp. 815–827, 2017.

[2] X. Chen, Starke Sandra, C. Baber, and A. Howes, "A Cognitive Model of How People Make Decisions Through Interaction with Visual Displays," Proc. ACM CHI'17 Conf. Hum. Factors Comput. Syst., no. November, pp. 1205–1216, 2017.

主要结论：文字只能被视觉中心捕捉，颜色可以被余光感知到

[3] A. Dasgupta, S. Burrows, K. Han, and P. J. Rasch, "Empirical Analysis of the Subjective Impressions and Objective Measures of Domain Scientists' Visual Analytic Judgments," pp. 1193–1204, 2017.

[4] K. Wongsuphasawat et al., "Voyager 2: Augmenting Visual Analysis with Partial View Specifications," Proc. SIGCHI Conf. Hum. Factors Comput. Syst., pp. 2648–2659, 2017.

Voyager with a more reinforced partial specification assistant.

[5] M. Correll and J. Heer, "Regression by Eye : Estimating Trends in Bivariate Visualizations," Chi 2017, 2017.

主要结论：人在识别趋势时会自行忽略 outliers

[6] M. Stone, "Affective Color in Visualization," pp. 1364–1374, 2017.

研究了一系列感知上的经典颜色样板在可视化中的识别度。但 1.同一个图表中颜色用的太多了， 2.结论和我们一般的认知不太相符

[7] F. Du, N. Cao, and Y. Lin, "iSphere : Focus + Context Sphere Visualization for Interactive Large Graph Exploration," pp. 2916–2927, 2017.

[8] A. Deza, J. R. Peters, G. S. Taylor, A. Surana, and M. P. Eckstein, "Attention Allocation Aid for Visual Search," pp. 220–231, 2017.

[9] J. Sarracino et al., "User-Guided Synthesis of Interactive Diagrams," Proc. 35th Annu. ACM Conf. Hum. Factors Comput. Syst. - CHI '17, pp. 195–207, 2017.

[10] C. Gutwin, A. Cockburn, and A. Coveney, "Peripheral Popout," Proc. 2017 CHI Conf. Hum. Factors Comput. Syst. - CHI '17, pp. 208–219, 2017.

[11] J. Heer, B. Shneiderman, and C. Park, "A taxonomy of tools that support the fluent and flexible use of visualizations," Interact. Dyn. Vis. Anal., vol. 10, pp. 1–26, 2012.

信息可视化和可视分析的工具分类，偏科普向

[12] E. Santos, L. Lins, J. P. Ahrens, J. Freire, and C. T. Silva, "VisMashup: Streamlining the creation of custom visualization applications," IEEE Trans. Vis. Comput. Graph., vol. 15, no. 6,

pp. 1539–1546, 2009.

科学可视化 3D 绘制相关 (VTK)。指定一个 pipeline 中不变的部分和可变的参数生成模板, 然后以模板进行可视设计, 并提供一系列辅助的比较工具

[13] S. McKenna, D. Mazur, J. Agutter, and M. Meyer, “Design activity framework for visualization design,” *IEEE Trans. Vis. Comput. Graph.*, vol. 20, no. 12, pp. 2191–2200, 2014.

设计过程建模。分类了几种设计行为, 并和 tamara 的嵌套模型结合

[14] B. Liu, B. Wünsche, and T. Ropinski, “Visualization by example-a constructive visual component-based interface for direct volume rendering,” *Int. Conf. Comput. Graph. Theory Appl.*, 2010.

SpreadSheet 类的可是构建工具 (SciVis/体绘制)

[15] C. E. Scheidegger, H. T. Vo, D. Koop, J. Freire, and C. T. Silva, “Querying and creating visualizations by analogy,” *IEEE Trans. Vis. Comput. Graph.*, vol. 13, no. 6, pp. 1560–1567, 2007.

类似上面的 VisMashup。有对 pipeline 进行的相似度度量。

[16] Z. Luo, L. Liu, J. Yin, I. Y. Li, and Z. Wu, “Deep Learning of Graphs with Ngram Convolutional Neural Networks,” no. 2, pp. 1–14.

邻接矩阵形式的图的 DL 研究。通过不断移动的窗口进行局部模式的识别

Australia Visa

Submitted online. Waiting for responses.

TODO Next Week

- 有一门考试 (应用数学下)
- 确定 VisComposer 的改进方向
- 准备暑期学校演讲内容